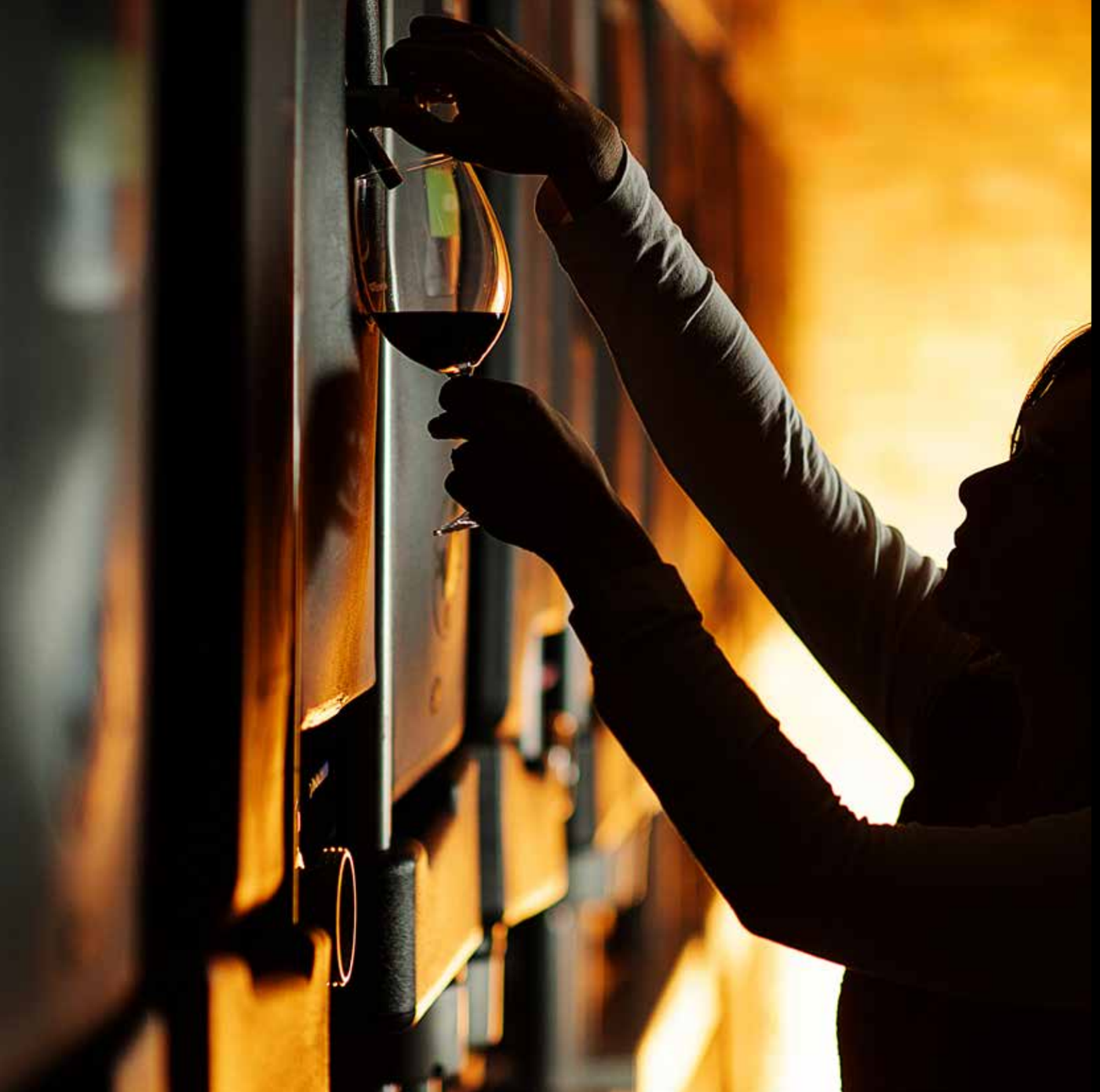
flexcube
the new cooperage

flexcube
flexcube
M



When tradition is re-imagined

As a winemaker, I thought I loved traditional barrels for the characters they were giving to my wine. Over time, I found myself becoming less and less willing to bear the inevitable inconsistency in barrel selection I was facing every year and all the flaws inherent in traditional barrels. I believed a better barrel had to exist for winemakers!

At Flexcube, we have created the evolution of the barrel, the Next Generation Barrel. We have taken every winemaking characteristic we love about traditional barrels and eliminated all the weaknesses. Our secret? We marry cutting-edge thinking and know-how and separate the two prominent applications of barrels - oxygen and oak.

Peter Steer - Winemaker & Flexcube's Managing Director

More
about us

The Next Generation Barrel

The Flexcube barrel is designed to produce exactly the same wine quality as the most iconic traditional barrels but with unrivaled consistency. To achieve this, we blend the latest innovation in winemaking with our know-how and separate the elements of oxygen and oak to increase control and consistency.

The oxygen permeable polymer of the Flexcube provide the oxygen element necessary in the maturation of wine through constant and linear passive oxygenation. The high quality of our barrel oak, BarriQ, provides the flavours, tannins, aromas and complexity equal to top end barrels. Together, Flexcube and BarriQ are the Next Generation Barrel.

"It is simple. We put the barrel oak in the wine, not the wine in the oak barrel"

Wayne Donaldson - Global Technical Director

More about
the Next Generation Barrel

Oxygen

We know oxygen can be both beneficial and detrimental to our wine. The right amount of oxygen and our wine will showcase its beauty perfectly. Too much or too little and we all know what happens.

Traditional barrels are highly variable in the amount of oxygen they supply. Every winemaker has learned to deal with this barrel variation by either ignoring it or compromising on the quantity of wine produced. All the while, believing nothing could be done about it. At Flexcube, we know it doesn't have to be like this.

Flexcube allows oxygen to permeate its walls through a precise and controlled oxygen ingress. Working closely with the University of Valladolid in Spain, Flexcube's engineers have designed our Flexcube with three different oxygen permeability options to meet the specific needs of your wine: Low (6mg/l/year), Medium (9mg/l/year) and High (12mg/l/year).

When coupled with the 3.6mg/l that BarriQ barrel oak releases during the first two months of ageing, the medium permeability Flexcube matches exactly the average oxygen contribution of a traditional barrel.

More than just the same, the oxygen permeability of Flexcube is precisely engineered to remain unchanged from year to year, allowing a more progressive, smooth and respectful integration between oak and wine. Indeed, when filling up a new traditional barrel, 11mg/l of oxygen are released from the oak to the wine in only about 20 days. This shocks the natural equilibrium of the wine. Wine aged in the Next Generation Barrel doesn't have to cope with this tension. Every element is measured and controlled to create the best maturation environment for your wine.

More about
the importance of oxygen
in wine maturation

Do you know that the Oxygen Transmission Rate of traditional oak barrels can vary by up to 3 times (From 10 to 30 mg/L/year) from barrel to barrel?

This is a major cause of the barrel to barrel variation we see.

BarriQ is barrel oak

Take any of your top traditional oak barrels in your barrel room, remove the hoops and flatten the staves again. Do you still have high quality barrel oak in front of you?

Of course you do. This is precisely what BarriQ barrel oak is.

High quality oak

BarriQ barrel oak is exclusively sourced from slow growth Haute Futaie state forests in France and harvested at 150-250 years old. BarriQ oak comes from exactly the same trees and exactly the same part of those trees, that are used to make top-end traditional barrels.

Hand split, not sawn

BarriQ is 100% hand split. This is vitally important to preserve the full length of the 'tubes' within the wood, allowing the retention and slow release of oxygen. Slow release slows the reaction speed (the reaction kinetics) and allows better oak integration. You need this time to make great wines.

23mm Thick Staves

BarriQ is 23mm thick. Greater thickness is important for the same reason; to slow the release and integration of oak tannins, aromas and flavours.

24+ months seasoning

BarriQ is naturally seasoned for at least 24 months to allow 3 key oenological processes: phenolic extraction, oxidation of ellagic tannins and growth of aromatic complexing micro-flora.

More about BarriQ barrel oak

FLEXCUBE PROVIDES YOU THE EXACT SAME WINE QUALITY AS THE MOST ICONIC TRADITIONAL BARRELS BUT WITH UNRIVALED CONSISTENCY.

IDENTICAL FROM ONE NEXT GENERATION BARREL TO ANOTHER.

IDENTICAL YEAR AFTER YEAR.

BARRIQ IS CONSISTENCY & COMPLEXITY

BarriQ barrel oak is exclusively sourced from the same state forests and the same trees as the oak used to make top-end traditional barrels. It is also hand split and seasoned in the exact same way. The one difference is BarriQ barrel oak is convection toasted rather than fire toasted.

By its nature, fire toasting is inconsistent, as it varies within and along the same piece of oak, depending on the surface impact of the heat. Toasting is the outcome of time and temperature - these elements vary and thus the resulting toast varies as well.

Variability and inconsistency, of course, result in complexity, a valuable attribute - but it is hard to replicate from barrel to barrel.

Convection toasting, on the other hand, is controlled and measured and produces a uniformity of toast throughout the same piece of oak. The same level of toasting can be replicated infinite times, ensuring consistency from batch to batch.

Of course, uniformity doesn't give complexity. However, with expertise, we create blends of different toasts in different proportions to produce that sought after complexity but controlled and 100% replicable.

MORE ABOUT BARRIQ BARREL OAK

8 BarriQ barrel-blends

BarriQ barrel oak is available in eight exclusive barrel-blends. Each blend offers a unique combination and proportion of different toast levels delivering the oenological properties and complexity of the best fire toasted traditional barrels.

Our winemakers' favourite is the French Classic barrel-blend. This is a classic Bordeaux barrel combination. We add toasted head pieces where the finesse of the fruit needs to be preserved or enhanced and untoasted heads for most ripe, sound and concentrated wines.

In addition to this classic barrel-blend, we have created the most exquisite range: Tronçais and Jupilles single forest barrel-blends with untoasted heads. Their exclusive origins offer distinctively elegant tannins and are perfectly suited for complex reds and sweet and mineral whites. Oak from Tronçais and Jupilles are used worldwide to produce icon wines.

We are committed to make every wine unique in its kind. This is why our oak is designed to bring out the full potential of wine, while respecting its singular expression and the original qualities of the fruit. Drawing on their winemaking expertise, our technical managers strive to understand your aspirations. They will advise you step-by-step to ensure your wine reaches its desired oenological objective.

Our **8 BarriQ barrel-blends** are French Classic with toasted heads, French Classic with untoasted heads, American with untoasted heads, Russian with untoasted heads, Lafayette with toasted heads, Lafayette with untoasted heads, Tronçais with untoasted heads and Jupilles with untoasted heads.

Discover the 8 BarriQ barrel-blends

Case study

Wilhelm Coetzee
Durbanville Hills, Cape Town, South Africa

Varietal: Cabernet Sauvignon
Year: 2014/2015
Flexcube permeability: Low, medium and high
Flexcube size: 1,000L/10HL/265GAL
Oak used: BarriQ French Classic Barrel-Blend with untoasted head, 100% new barrel equivalent

How long have you been using Next Generation Barrels (Flexcube and BarriQ)?
"We conducted an 18 month trial in 2014/2015 on 1,000L Flexcubes (all permeabilities) using 100% new barrel equivalent BarriQ against 6 of our most popular cooperages. One of our selection blocks (Cabernet Sauvignon) was matured over 18 months in both 1,000L Flexcubes and traditional barrels. The aim was to measure if Flexcubes and various top-end 300L barrels deliver the same wine quality, i.e. could all treatments (Flexcubes vs. traditional barrels) be used in the final blend?

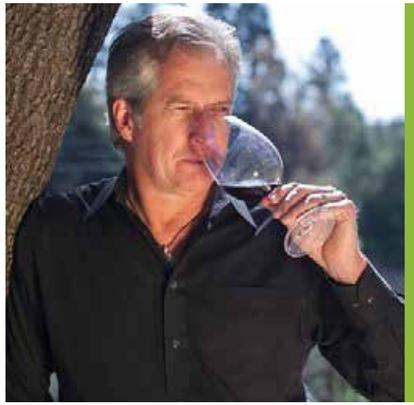
The trials yielded exceptional results and we have been using Flexcube ever since. Year to date we have more than 60,000 litres of our top- end wines maturing in Next Generation Barrels."

Which elements of the Next Generation Barrels do you really like?
"We produce wine in a reasonably cooler area than most other areas in South Africa. Purest fruit expression can very easily be dominated by various oak elements, whether it is sought after oak nuances like eugenol, vanillin or lactones, or it is maturation "artefacts" from older barrels. The combination of deciding the significance of influence of these nuances, as well as the oxygen ingress into the wine at a very precise and predicted rate, enables us to perform **"precision maturation"** in the true sense of the word:

1. I control the oak impact and therefore also the expression of fruit, finesse and purity: the intensity, toasting profile, weight and type of oak can be managed as a function, not only of the type of fruit but also the variability of the season.
2. Consistency: Larger volumes of our ultra-premium wines can be matured optimally by reducing many of the inconsistencies.
3. I control the level of hygiene: No residue from previous wines that may lead to potential scalping of the wine's fruit purity.
4. Cost savings: I don't have to mention the cost savings downstream, not only in terms of the initial capital costs, but also significant savings in energy, labour, resources and wine losses.

We will always use traditional barrels and we also do a fair amount of work with micro-oxygenation but the Next Generation Barrel has proven itself as a barrel's equal (and more...) in every sense. If I really have to sum it all up, I suppose, the Next Generation Barrel is a barrel that allows for precision maturation of your 'magical' parcels..."

Case study



Wayne Donaldson
Donaldson Wines, Napa Valley, USA

Varietal: Rutherford Cabernet Sauvignon
Year: 2015
Flexcube permeability: Medium and high
Flexcube size: 1,000L/10HL/265GAL
Oak used: BarriQ French Classic Barrel-Blend with untoasted head, 100% new barrel equivalent
Traditional barrels used: Baron, Saury, Nadalie and Oak Masters Selection

What were you trying to achieve?
"We wanted to compare traditional barrels vs Flexcube's Next Generation Barrels like for like. That means that we had to use Flexcubes with a 100% new barrel equivalent amount of BarriQ oak. So for a 256Gal (1,000L/10HL) Flexcube that was 16.5kg of BarriQ oak."

What process did you use?
"The pressed wine went into traditional barrels and Flexcubes at the same time to allow malolactic fermentation to take place. The barrels I used were Baron, Saury, Nadalie and Oak Masters Selection. Once through malo, the wine was racked, SO_2 added and returned to barrel and Flexcube. Each traditional barrel and Flexcube was treated in parallel.

I gave it one racking. We started using medium permeability Flexcubes. It is about understanding your wine style and then adapting as you go along. We are now tending to switch a little more to high permeability Flexcubes with Napa Cabernet as it has a greater tannic intensity. One of the great things with Flexcube is that you have that flexibility.

If you want to hold your wine a little tighter in a reductive phase you can and then you can move to a more elevated maturation in a high permeability Flexcube later on."

What were your main observations?
"**Speed of ferment** between barrel and Flexcube was the same, both completed ferment at the same time. For SO_2 the key is the total amount and the barrels ended with higher total SO_2 which shows me we are having to add more SO_2 to barrels than Flexcubes.

Topping volumes for Flexcube (after the first 3 months stretch period) were less. I definitely top more with barrels than Flexcubes. With barrels **temperature and humidity** are important but with Flexcubes the humidity is not as important, you don't have to run a cellar as humid with Flexcubes as you do with barrels.

I saw barrels giving up their **oak** quicker than BarriQ. That was quite obvious [sensorially], but I looked at total integration over time. I am talking about wines I want in barrel for 2 years before bottling. The BarriQ oak is elegant, structuring and flavourful.

At the final **sensory** assessment, the barrels and Flexcubes ran parallel. I really do believe the Next Generation Barrels of Flexcube are comparable to new traditional barrels. I'd feel completely confident using Flexcube and BarriQ on even our highest price point wine."

What have you found are the key points of using Flexcube's Next Generation Barrels?
"When I think about the Flexcube concept and its relationship to barrels, Flexcube is essentially deconstructing what a traditional barrel does and reconstructing in a form that is much more flexible, much more adaptive and much more agile when it comes to the winemaking process.

If you can achieve the same result but with a cost effective system, you've got a win. It has been proven that Flexcube works. It is permeable, it is inert, it is functional, but the secret to achieving a successful result, the important element, is barrel quality oak. It all hinges around the quality of the oak and the proof is in the pudding. Every time I taste the BarriQ oak - my 2015 Syrah today that has BarriQ Tronçais oak - it is just exquisite, integrated and elegant.

With Flexcube you get much more efficient use of your oak and your environmental footprint is greatly reduced! There is a real advantage here. Barrels are beautiful pieces of furniture, exceptionally useful but have inherent problems.

The challenge that a lot of winemakers have is the thought that anything other than a barrel is not barrel quality. Up until now we haven't had superior quality oak in non-barrel form but today we have BarriQ and when paired with a Flexcube, well...we have a barrel replica. The kinetics of oak extraction into wine is woefully misunderstood, even with barrel users. We tend to think a barrel is traditional, we like it, we love it, we think it is perfect but in many ways it is not. There is a lot of marketing romance and operational convention around barrels, barrel washing systems, racks, etc. I can see that if I have four coopers in my program, then Flexcube is happily one of them."

A RESPONSIBLE USE OF OAK

When maturing in traditional barrels, our wine is in contact with only 3 to 5 millimeters of oak, which is less than 20% of the total barrel oak amount. The 80% remaining of this secular oak is simply never used for its oenological proprieties but solely to serve as a simple container.

While this is how it traditionally works, at Flexcube, we believe we can and must do better to manage our precious oak in a more sustainable manner. We believe using prized oak trees as a simple container must come to an end. We must only use what is needed for its oenological gift.

We replace the oak container by a highly innovative oxygen permeable polymer shell and focus the use of oak for what it is required: its oenological proprieties. We designed BarriQ barrel oak to be immersed in the wine and freely nourish it with its tannins and aromas. We re-imagined the barrel. The oak is still the same, genuine barrel oak, simply not bent and hooped. By introducing this evolution in shape, the contact surface has increased and the wine now embraces every single side of the oak stave, including the ends. This is highly important. The wine can now flow more freely through the tubes along the full length of the stave and be perfectly nourished by the flavours and aromas of the oak, resulting in an optimal and responsible oak maturation.

THE NEXT GENERATION BARREL IMPROVES THE TRADITIONAL BARRELS OENOLOGICAL EFFICIENCY OF OAK BY 7 TIMES!

OUR BARRIQ BARREL OAK IS CERTIFIED PEFC. PEFC IS THE WORLD'S LARGEST FOREST CERTIFICATION SYSTEM. IT AIMS TO TRANSFORM THE WAY FORESTS ARE MANAGED GLOBALLY AND LOCALLY TO ENSURE THAT ALL OF US CAN ENJOY THE ENVIRONMENTAL, SOCIAL AND ECONOMIC BENEFITS THAT OUR FORESTS OFFER FOR YEARS TO COME.

PEFC: PAN EUROPEAN FOREST CERTIFICATION

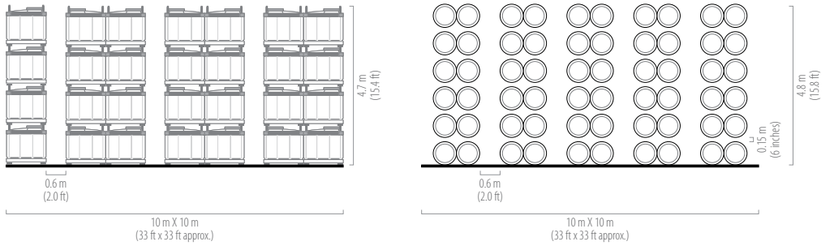
MORE ABOUT OUR COMMITMENT TO THE ENVIRONMENT

The most efficient barrel

Along with grape costs, cooperage and packaging, one of the highest costs you are facing is usually labour. A high part of this is maintaining your traditional oak barrels. What if you could reduce your cellar labour by up to 4 times by switching to a more cleverly designed barrel?

Our winemakers' favourite, the 1,000L / 265Gal Flexcube is equivalent in capacity to 4.4 traditional 225L oak barrels but it only requires the maintenance of one. It has been engineered to simplify your job. The Next Generation Barrel is easier to clean, fill, top up, sulphur, empty and clean again! And of course move around, stack, unstack, restack and move around again!

And even more, the Next Generation Barrel is the most floor space efficient barrel available today:



FLOOR SPACE UTILISATION	Units per Stack	Capacity each	Units per 100m²	Total capacity per 100m²
Next Generation Barrel	4	1,000L / 265Gal	224	224,000L / 59,200Gal
Traditional Barrel	6	225L / 60Gal	600	135,000L / 35,700Gal

More about
the Next Generation Barrel

Flexcube specifications

1,000 litres/10hl/265gal

Width	1,150mm/ 45.27”	Tare (Dry)	110kg/ 243lbs	Transport	2 Flexcubes
Length	1,150mm/ 45.27”	Gross	1,110kg/ 2,447lbs	Static (Full)	4 Flexcubes
Height	1,222mm/ 48.11”				

1,500 litres/15hl/397gal

Width	1,150mm/ 45.27”	Tare (Dry)	126kg/ 278lbs	Transport	1 Flexcube
Length	1,150mm/ 45.27”	Gross	1,626kg/ 3,585lbs	Static (Full)	2 Flexcubes
Height	1,624mm/ 63.93”				

2,000 litres/20hl/530gal

Width	1,150mm/ 45.27”	Tare (Dry)	135kg/ 298lbs	Transport	1 Flexcube
Length	1,150mm/ 45.27”	Gross	2,135kg/ 4,707lbs	Static (Full)	2 Flexcubes
Height	2,025mm/ 79.72”				

More about Flexcube

BarriQ specifications

	BarriQ – Grand	BarriQ – Petite	LBarriQ
Total composition	8 to 11 pieces	6 to 9 pieces	24 pieces
Weight per pack (15% moisture content)	9.25kg / 20lbs	6.16kg / 14lbs	5kg / 11lbs
Thickness/piece	23mm / 0.9”	23mm / 0.9”	12mm / 0.47”
Length/piece	Mix of 950mm, 600mm & 475mm/37.40”, 23.62” & 18.70”	Mix of 950mm, 600mm & 475mm/37.40”, 23.62” & 18.70”	950mm / 37.40”
Width/piece	Varies from 50 to 100mm / 1.97” to 3.94” (Bordeaux Château barrel standard)	Varies from 50 to 100mm / 1.97” to 3.94” (Bordeaux Château barrel standard)	27mm / 1.06”
Seasoning	Natural, 24+ months (from harvest to toasting)	Natural, 24+ months (from harvest to toasting)	Natural, 24+ months (from harvest to toasting)
Toasting	Convection	Convection	Convection
Recommended contact time	9 to 18 months	9 to 18 months	6 to 12 months

Usage rates

1,000L/10 HL/ 265Gal Flexcube	1 pack is equivalent to 60% new barrel	1 pack is equivalent to 40% new barrel	1 pack is equivalent to 31% new barrel
1,500L/15 HL/ 397Gal Flexcube	1 pack is equivalent to 40% new barrel	1 pack is equivalent to 27% new barrel	1 pack is equivalent to 21% new barrel
2,000L/20 HL/ 530Gal Flexcube	1 pack is equivalent to 30% new barrel	1 pack is equivalent to 20% new barrel	1 pack is equivalent to 16% new barrel

More about BarriQ & LBarriQ

AUSTRALIA
USA
SOUTH AFRICA
FRANCE
SPAIN
PORTUGAL
CHILE
CHINA
CANADA
HUNGARY
ISRAEL
TURKEY

WWW.FLEXCUBEGROUP.COM